

**MANFREDA CHAMELENSIS (AGAVACEAE: POLIANTHEAE), A NEW  
SPECIES FROM WESTERN MÉXICO**

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ABSTRACT

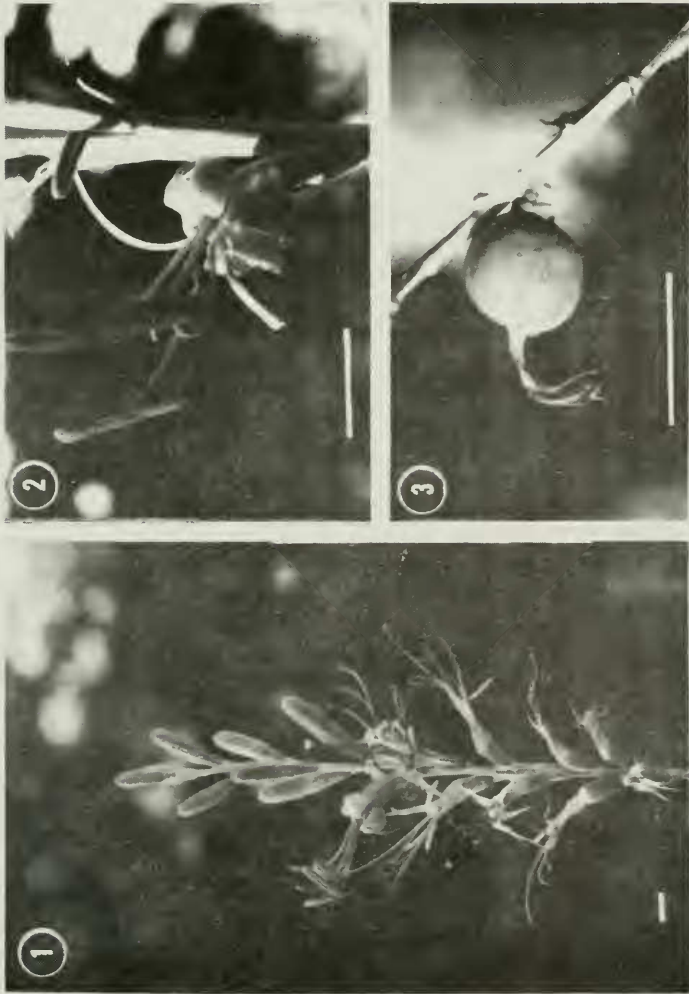
*Manfreda chamelensis* *spec. nov.* is described from coastal Jalisco, México. Its relationships with *M. brachystachya* (Cav.) Rose and *M. jaliscana* Rose are discussed.

KEY WORDS: *Manfreda*, Agavaceae, Poliantheae, México

Continued studies of the flora of the Estación de Biología Chamela U.N.A.M. and surrounding area of coastal Jalisco, México have resulted in the discovery of various novelties, among them the following.

*Manfreda chamelensis* E. Lott & S. Verhoek, *spec. nov.* TYPE: MÉXICO. Jalisco: Mpio. La Huerta: Arroyo Las Maderas, antiguo camino a Nacastillo, 8 Dic 1982, E. Lott & T. Wendt 1663 (HOLOTYPE: MICH; Isotypes: BH, CAS, MEXU). Figs. 1-3.

Ex caterva *Manfredae brachystachyae* (Cav.) Rose; differt a *M. jaliscana* Rose staminibus 1.5-2.5 cm exsertis et tubo supra ovarium non constricto; differt a *M. brachystachya* (Cav.) Rose tubo florali brevioris et capsula globosa sine rostro; differt ab ambabus habitatione terris inferis in sylva tropica decidua vel subdecidua.



Figures 1-3. *Manfreda chamelensis*. 1. Portion of inflorescence. 2. Flower. 3. Fruit. Photos by S.H. Bullock from *Solis Magallanes s.n.* White lines represent 1 cm.

Geophytes, reproducing vegetatively by buds from the rhizome; roots fleshy, rhizome 3-15 cm long, 2-3 cm diam, upright, cylindrical, with small white pointed buds; remnants of leaf base membranous, not separating into fibers. Leaves to 9 in a rosette, herbaceous to somewhat fleshy, brittle, spreading, narrowly channeled, nearly conduplicate near the base; laminae 40-75 cm long, 2-5 cm wide, linear to linear lanceolate, dark green, purple speckled near the base; apex acute; base narrow; margins with a narrow yellowish cartilaginous band, minutely denticulate, the teeth regular; veins papillate above and below. Inflorescence 75-120(-205) cm tall; rachis slender, glaucous, the flowering portion 10-20 cm long, bearing 10-25(-35) flowers, the second internode 0.5 cm long; bracts of scape to ca. 8 cm long, few, abruptly smaller than the leaves, linear lanceolate, acute, thin; floral bracts 3-5 mm long, triangular; bracteoles 1-2 mm long, triangular. Flowers sessile; buds clavate, the apex obtuse; mature flowers nearly erect, green; ovary 0.5-1 cm long, ca. 0.2 cm wide, oblong to ovate, not protruding into the tube; tube 0.6-1.3 cm long, longer than the ovary, funnellform, tepals 0.8-1.1 cm long, reflexed to tightly revolute at anthesis, oblong, shorter than the tube, the apex slightly swollen, obtuse; apical tuft small, narrowly triangular; filaments slender, bent near tip in bud, inserted at top 1/2 of the tube, exceeding the tube by 1.5-2.5 cm, straight, slender, green, densely purple speckled; anthers (1.0-)1.3-1.5 cm long, minutely papillate; style at first short, strongly bent toward lower lobes, at maturity straight, exerted by 2.5-3.5 cm; stigma clavate, trigonous, the furrows not extending past the apex. Capsule 1.2-1.6 cm long, 1.0-1.5 cm wide, glaucous, globose, the withered flower persistent; seeds 5-6 mm and 4-5 mm on the radial margins,  $\pm$  cuneiform.

The specific epithet refers to the town of Chamela, Jalisco.

Additional collections examined: MEXICO. Jalisco: Mpio. La Huerta: Arroyo Colorado, Estación de Biología Chamela, s.d., *Solis Magallanes s.n.* (Plants in cultivation at Est. Biol. Chamela); Pueblo Careyes, 24 Jul 1986, *Lott & Atkinson 2817* (MEXU); Rancho Cuixmala, Cumbres 1, Upper Arroyo Cajones, 14 Jan 1991, *Lott, et al. 3271* (UCR).

*Manfreda chamelensis* E. Lott & S. Verhoek belongs to a group of species related to *M. brachystachya* (Cav.) Rose. Of these, it appears to be most closely related to *M. brachystachya* and *M. jaliscana* Rose. It is similar to both species in the presence of papillate cells over the veins and in the openness of the inflorescence. It differs from both species by its shorter floral bracts (Table 1), filaments bent near the tip at bud opening, and the absence of coarse fibrous remnants of old leaves. Further, *M. chamelensis* differs from *M. brachystachya* by its shorter floral tube and globose, beakless capsule, and from *M. jaliscana* by its wider leaves and shorter styles and filaments (Verhoek-Williams 1975).

The new species is known only from the vicinity of Chamela, Jalisco, where it is uncommon along arroyos in tropical deciduous and semideciduous forest, at elevations of about 50-75 m. Flowering occurs in December.

Table 1. Some characters distinguishing *Manfreda chamelensis* from *M. brachystachya* and *M. jaliscana*.

Characters	<i>M. chamelensis</i>	<i>M. brachystachya</i> <sup>1</sup>	<i>M. jaliscana</i>
Remnant leaf bases	not separating into fibers	separating into stiff fibers at top, 5-12 cm long	separating into stiff fibers at top, 4-7 cm long
Leaves	40-75 x 2-5 cm	mostly 37-77 x 1-6-4.8 cm	mostly 49-78 x 0.6-1.4(-2.8 cm)
Floral bract length	0.3-0.5 cm	1.0-3.2 cm	0.6-1.0 cm
Tube length	0.6-1.3 cm	(0.9-)1.3-2.8 cm	0.4-1.0 cm
Filaments	bent near tip at bud break	bent at upper third in bud	bent near midpoint in bud
Stamens exceeding tube	1.5-2.5 cm	(1.6-)2.0-3.5 (-4.7) cm	(4.8-)5.2-7.6 cm
Style exceeding tube	2.5-3.5 cm	2.4-3.7(-7.4) cm cm	(5.6-)6.2-8.4(-9.8)
Capsule	globose; 1.2-1.6 x 1.0-1.5 cm, beak absent	oblong; 1.8-2.9 x 1.1-1.6 cm, with beak 0.2-0.3 cm	globose to oblong; 1.1-2.7 x 1.2-1.7 cm, with beak 0.2-0.3 cm
Habitat	tropical deciduous and semideciduous forest, 50-75 m	oak-pine forest, 180-2450 m	oak forest, pine forest, 760-1050 m

<sup>1</sup>Data for *Manfreda brachystachya* and *M. jaliscana* from Verhoek-Williams (1975).

## ACKNOWLEDGMENTS

We are grateful to F. Chiang C. and G. Nesom for the Latin diagnosis and to T.F. Daniel and J.L. Villaseñor for reviewing the manuscript. S.H. Bullock kindly supplied the photographs. We thank T.H. Atkinson for technical assistance.

## LITERATURE CITED

- Verhoek-Williams, S.E. 1975. A study of the tribe Poliantheae (including *Manfreda*) and revisions of *Manfreda* and *Prochnyanthes* (Agavaceae). Ph.D. dissertation, Cornell University. (University Microfilms, Inc., Ann Arbor).